Appendix table 1. Summaries of published studies on patient online reviews (63 studies consisting of 69 articles).

Authors	Time and	Rating websites	Type and number	Number of	Research design and	Key findings
	Location		of providers	online ratings	analytical methods	
			reviewed	and comments		
Black et al.,	2009, the	1 site:	Providers	16,703 ratings	Qualitative and	Mean rating=3.7~4.0/5.
2009 [25]	US (Dallas,	RateMDs.	(n=6,101).	and 15,952	quantitative analysis of	
	New York			comments.	POR.	
	City,					
	Chicago,					
	San					
	Francisco).					
Lagu et al.,	2009, the	33 sites.	Physicians (n=81)	190 reviews.	Qualitative and	Positive reviews: 88%.
2010 [3]	US		out of 300		quantitative analysis of	Generalists & specialists did not
	(Boston).		random samples.		POR.	differ in number or nature of
						reviews.
Kadry et al.,	2010, the	10 sites from	Multiple	4,999 online	Calculated online	Average rating was 3.85/5; 2/3
2011 [75]	US.	Google	specialties (n=23)	ratings.	ratings.	patient reviews were favorable.
		Trends;	in 25 metros.			
		mostly from				
		HealthGrades,				
		Vitals, Yelp.				

Gao et al.,	2005-	1 site:	Physicians with	386,559	Ratings of 4 domains:	Mean online rating=3.9/5.
2012 [1]	2010, the	RateMDs.	ratings on	physician	staff, punctuality,	OB/Gyn were twice likely to be
	US		RateMDs and	ratings.	helpfulness, and	rated than other physicians.
	(Virginia).		registered in		knowledge on scale of	Higher ratings: recently
			Virginia Board of		1~5.	graduated, board-certified, from
			Medicine.			highly rated medical schools, and
						no malpractice claims.
Emmert et	2012,	8 sites	Physicians	127,192	Categorized POR	Mean number of rating=2.37.
al., 2012	Germany.	(German)	(n=53,585).	ratings;	according to	Most rated specialties:
[26]		identified		107,148	structure/process/outc	orthopedists, dermatologists &
		through		patient	ome model.	gynecologist; 2/3 POR were
		Google and		evaluations.		"very good".
		Yahoo.				
Greaves et	2009-	1 site: NHS	Family practices	16,952	Compared PORs with	64% of patients would
al., 2012a	2010, the	Choices.	(n=4,934).	ratings.	patient surveys and	recommend their GP. Correlation
[33]	UK				clinical outcomes	of POR & survey = 0.37~0.48;
	(England).				obtained from NHS	correlation of POR & clinical
					Information Center and	outcomes=0.18.
					NHS Comparators.	
Greaves et	2009-	1 site: NHS	Acute general NHS	9,997 ratings.	Compared POR with	67.4% of patients would
al., 2012b	2010, the	Choice.	hospital trusts in		paper-based patient	recommend the hospitals.
[34]	UK		England (n=146).		surveys.	Correlation of POR & paper-
	(England).					based survey=0.31~0.49.

Segal et al.,	The US.	9 sites: Avvo,	Surgeons of	588 ratings.	Compared online	91.2% of surgeons had POR. High
2012[62]		HealthGrades,	bariatric, lumbar,		ratings with surgical	volume surgeons received more
		RateMDs,	total knee		volume as a proxy for	ratings than low volume
		Vitals, Google,	replacement		clinic outcome and	surgeons and higher proportion
		CitySearch,	surgery (n=600).		safety.	of praises, but effect size was
		InsiderPages,				weak.
		Yahoo, Yelp.				
Bardach et	2011, the	1 site: Yelp.	Hospitals (n=962)	3796 ratings.	Compared POR with	25% of HCAHPS hospitals had
al., 2013	US.		with Yelp ratings.		data from HCAHPS ³ .	yelp rating. Correlation of Yelp
[56]						rating and HCAHPS=0.49. Higher
						rating was associated with lower
						mortality & readmission rates.
Lagu et al.,	The UK.	1 site: NHS	Hospitals (n=20)	200 reviews.	Qualitative &	Most comments were positive;
2013 [32]		Choices.	randomly selected		quantitative analyses	62% of comments were about
			from 264		of POR and patients'	technical aspects of hospital
			hospitals.		surveys.	care; hospitals replied to 56% of
						patient reviews.
Lopez et al.,	2012, the	2 sites: Yelp,	Primary care	712 reviews.	Qualitative analysis of	63% of POR were positive. Care
2012 [57];	US	RateMDs.	physicians (n=445)		POR.	encounter reached past the
Detz et al.,	(Atlanta,		from RateMDs			physician: staff, access, &
2013 [58]	Chicago,		(n=397) and Yelp			convenience.
	New York		(n=315).			

	City, San					
	Francisco).					
Ellimoottil	The US.	10 sites, but	Urologists (n=500)	NA	Calculated numerical	80% of urologists had ≥1 rating;
et al., 2013		mostly from	randomly selected		ratings, categorized	mean number of rating = 2.4;
[68]		HealthGrades,	from database.		qualitative reviews as	86% of POR have no difference
		Vitals,	398 of them had		positive/negative.	in POR between genders,
		RateMDs, and	at least 1 rating.			regions, & city sizes.
		Avvo.				
Wallace et	The US.	1 site:	US doctors	58,110	Probabilistic generative	Mean rating = 3.7/5. Median
al., 2014		RateMDs.	(n=19,636).	reviews.	model (f-LDA) that	word count in review = 41.
[11]					captured latent	Generative models show POR
					sentiment across	correlated with measures of
					aspects of care.	health care quality &
						expenditure.
Drevs &	2011,	1 site:	Hospitals.	822 from 695	Analyzed POR by	Hospitals of self-choice received
Hinz, 2014	Germany.	klinikbewertu		patients.	patient characteristics.	more positive reviews than those
[27]		ngen				of other-directed.
		(German)				
Emmert et	2012,	1 site: Jameda	Physicians	127,192	Compared patients'	37% of German outpatient
al.,	Germany.	(German)	(n=53,585)	ratings of	ratings with physicians'	physicians were rated. Mean
2014[28];				53,585	characteristics.	number of POR = 2.37.
Emmert &				physicians		Specialists were more likely
						rated than general practitioners

Meier,				from 107,148		or lab-based physicians. 2/3
2013[29]				patients.		ratings positive. Female
						physicians had better ratings
						than male.
Atkinson,	2013,	3 sites:	Physicians.	4,157 ratings.	Frequency analysis of	Mean number of POR = 3.4/5;
2014 [42]	Australia.	RateMDs,			POR.	mean score of rating = 3.9/5.
		DoctorRate,				Only 4.4% of registered doctors
		Health care				were rated; 47.3% of POR were
		Reviews.				for general practitioners.
						Radiologists & pathologists were
						least likely rated.
Sobin &	2013, the	2 sites:	Otolaryngologists	NA	Compared POR ratings	Mean rating = 4.4/5 & 3.4/4.
Goyal, 2014	US	HealthGrades,	(n=281) in 25		using analysis of	Number of ratings per physician
[84]	(Northeast	Vitals.	academic		variance (ANOVA).	= 4.7. Most POR were positive.
)		programs in			
			Northeast of US.			
Bakhsh &	2012, the	4 sites:	Orthopedic	2,185 reviews.	Frequency and	Mean rating = 81.8/100. Ratings
Mesfin,	US (St.	HealthGrades,	surgeons (n=131).		regression of POR by	varied across sites. Higher rating:
2014 [65]	Louis,	Vitals,			categories.	ease of scheduling, time spent
	MO).	RateMDs,				with patient, wait time, surgeon
		UCompareHea				proficiency, & bedside manner.
		Ith care.				

Emmert et	2013,	1 site: Jameda	Dentists	76,456 ratings	Median test and the	44.5% of German dentists were
al., 2015a	Germany.	(German).	(n=23,902).	from 72,758	Kendall tau-b test.	reviewed; 90% of those reviewed
[30]				patients.		received positive ratings. Better
						ratings were given by female,
						older patients, or those covered
						by private insurance.
Glover et	2014, the	1 site:	Hospitals (n=315)	NA	Retrospective case	Mean ratings = 4.05~4.15/5.
al., 2015	US.	Facebook.	with readmission		control study.	Better POR was associated with
[55]			rate better than		Compared POR with	lower 30-day readmission rate.
			national average;		Hospital Compare	Aggregate measures of patient
			Control hospitals		Metric, especially 30-	satisfaction on social media
			(n=364) below		day unplanned	correlated with traditional
			national average.		readmission rates.	measures of hospital quality.
Emmert et	2011-	2 sites:	Physicians (n=65)	1,179 ratings	Compared 21 structural	7 out of 21 indicators were
al., 2015b	2013,	Jameda,	from German	on Jameda;	and quality of care	strongly correlated between
[31]	Germany.	Weisse Liste	Integrated Health	991 ratings on	measures with POR.	survey & POR. Mean
		(German).	Care Network	Weisse Liste.		rating=16.80 per practice.
			(QuE).			Weisse Liste rating = 3.9~4.4/5.
						Jameda rating = $1.6^{1.8}/1^{6^{(2)}}$.
						Big differences between PRWs.
Frost &	The US (30	7 sites: Vitals,	Orthopedic	1,562 reviews.	Descriptive statistics on	Mean rating = 71.4/100. No
Mesfin,	metros).	HealthTap,	surgeons (n=525).		ratings.	difference in rating between
2015 [74]		HealthGrades,				genders and regions. Surgeons

		Yelp,RateMDs,				with practice time of 6-10 years
		DoctorScoreca				had higher ratings than others.
		rd, Health				
		care Reviews.				
Lewis et al.,	The US	3 sites:	Board-certified	NA	Searched ratings by	Mean rating = 85%. Number of
2015 [85]	(Southern	HealthGrades,	plastic surgeons		surgeon's names.	POR = 0~222 with mean value of
	California).	Vitals,	(n=263) in the		Calculated POR.	11 POR per PRW; 97% had ≥ 1
		UCompareHea	region.			ratings. No relationship of
		Ith Care.				number of POR and mean rating.
van de Belt	Netherlan	3 sites:	All health care	NA	Searched for incident-	Only PORs on PRW added
et al., 2015	ds.	Facebook,	providers.		or risk-related PORs on	additional values to health care
[41]		Twitter,			social media & PRWs.	quality check, other social media
		Zorgkaart				sites did not.
		(Dutch).				
Hao &	2006-	1 site: HaoDF	Chinese doctors	730,000	Extracted hidden topics	2/3 of doctors received ≥ 2
Zhang, 2016	2014,	(Chinese).	(n=75,000) from	ratings and	using LDA.	reviews. Some doctors received
[35]; Hao,	China.		Internal Medicine,	reviews.		> 500 reviews. Most popular
2015 [36]			OBGYN,			topics were experience of finding
			Pediatrics, &			doctors and treatment.
			Chinese Medicine.			
Nwachukwu	2015, the	3 sites:	Sports medicine	NA	Compared POR across	Mean rating = 4.0/5. Higher
et al., 2016	US.	HealthGrades,	surgeons (n=275)		sites. Multivariate	ratings were associated with
[44]			from American			female, fewer years of practice.

		RateMDs,	Orthopedic		regression of good	Low to moderate correlation
		Vitals.	Society for Sports		ratings on covariates.	between rating sites (r =
			Medicine member			.32~.51).
			directory.			
Okike et al.,	2015, the	4 sites:	Cardiac surgeons	NA	Compared POR with	Mean rating = 4.4/5. 96% of
2016 [59]	US (CA,	HealthGrades,	(n=590) in the 5		30-day risk-adjusted	cardiac surgeons were rated
	MA, NJ,	Vitals,	states listed in		mortality rate following	online. No correlation between
	NY, PA).	RateMDs,	state reports.		coronary artery bypass	rating and age-adjusted
		UCompareHea			surgery.	mortality rates.
		Ith Care.				
Bardach et	2013, the	1 site: Yelp.	HCAHPS hospitals	244 narrative	Thematic analysis of	POR rating was positively
al., 2016	US.		with > 100 PORs	reviews with	narrative reviews and	associated with HCAHPS rating.
[54]			on Yelp (n=193)	more than 10	compared with	50% of reviews were from
				words.	HCAHPS domains.	patients, 38% from friends or
						family. Only 57% of reviews
						mentioned any HCAHPS domain.
						Additional salient domains were:
						Financing, unexpected out-of-
						pocket costs, difficult
						interactions with billing
						departments; system-centered
						care; & perceptions of safety.

Trehan et	2014-	3 sites:	Hand surgeons	NA	Compared POR with	Mean rating = 3.3~4.0/5. 98% of
al., 2016	2015, the	HealthGrades,	(n=245) randomly		physicians'	hand surgeons were rated
[61]	US.	RateMDs,	selected from		characteristics.	online. Higher rating was
		Vitals.	American Society			associated with higher number
			for Surgery of			of ratings, Castle Connolly
			Hand member			Status, & increased online
			directory.			presence.
Riemer et	2015, the	5 sites:	Dermatologists	3,448 ratings.	Mean score of POR and	Mean rating = 3.5/5. No
al., 2016	US.	ZocDoc, Yelp,	(n=100).		its association with	difference between PORs across
[60]		RateMDs,			physician	PRWs, no difference between
		Vitals			characteristics.	genders & specialty training.
		HealthGrades.				
Kilaru et al.,	The US.	1 site: Yelp.	Emergency	1,736 reviews.	Compared POR with	POR were similar to inpatient
2016 [48]			departments from		HCAHPS inpatient care	surveys, especially PPC ⁵ & pain
			hospitals (n=100)		survey. Qualitatively	control. Major themes specific to
			by stratified		coded review texts.	ED care were: wait-time &
			random sampling.			efficiency, decisions to seek ED
						care, & events following
						discharge.
Ranard et	2014, the	1 site: Yelp.	Hospitals	16,862	LDA compared POR	Median rating=3.2/5. Domains in
al., 2016	US.		(n=1,352) with	reviews.	with HCAHPS ³ survey	Yelp reviews covered the
[53]			Yelp reviews and		data of hospitals.	majority of HCAHPS domains;
			HCAHPS data.			Yelp reviews covered additional

						12 domains not covered in
						HCAHPS.
Kool et al.,	2010-	1 site:	Hospitals (n=7)	43,856 online	Examined the influence	Hospitals under intensified
2016 [39]	2015,	Zorgkaart	under intensified	ratings.	of supervision by	supervision had lower rating
	Netherlan	(Dutch).	supervision; Other		Health Care	(mean=8.2/10) as compared
	ds.		hospitals (n=28) as		Inspectorates on POR	with control (mean=8.5/10).
			control.		of hospitals.	
Smith &	2015, the	2 sits: Yelp,	Dermatologists	518 reviews	Qualitative analysis to	Mean rating = 3.46~4.72/5.
Lipoff, 2016	US	ZocDoc.	(n=90).	on Yelp; 4,921	identify key themes	Positive POR were associated
[63]	(Houston,			reviews on	associated with high-	with physicians who were kind,
	Philadelph			ZocDoc.	and low- scores of POR.	respectful, thorough,
	ia,					empathetic, & cognizant of cost.
	Seattle).					Patients reported relying on
						PRWs to identify dermatologists.
Lagu et al.,	2016, the	28 sites:	Physicians (n=600)	8,133 ratings	Mean and median	Median number of POR = 7
2017 [10]	US 3	generated	randomly sampled	& 1,784	number of reviews per	reviews per physician. 34% of
	metros:	from Google	from 3 metros.	comments.	physician per site.	physicians did not have any
	(Boston,	search.				online review. Commercial PRWs
	Portland,					have significant limitations.
	Dallas).					
Ramkumar	2016, the	5 sites:	Arthroplasty	27, 792	Compared POR with 7	Mean rating = 4.3/5. No PRWs
et al., 2017	US.	HealthGrades,	surgeons (n=556)	ratings; 1/3 of	domains of Patient	contained all Consensus Core
[46]		Vitals, ZocDoc,	from top 10	ratings	Experience Domain	domains. No difference in POR

		RateMDs,	hospitals with	contained	Items of Consensus	between academic & non-
		Yelp.	orthopedic	narrative	Core ⁽¹⁾ .	academic surgeons.
			surgery.	comments.		
Kirkpatrick	2016, the	2 sites:	Hand surgeons	NA	Number of PORs per	Mean rating = 8.1/10. Mean POR
et al., 2017	US.	HealthGrades,	(n=433).		physician; mean POR	per surgeon = 13 (0~148). No
[47]		Vitals.			score and its	difference in overall score by
					association with	region or gender. Older age was
					physician	associated with lower score.
					characteristics.	Wait time was not associated
						with negative POR.
Hao et al.,	2015, the	2 sites:	OBGYN specialists	RateMDs:	LDA topic modeling to	PORs reflected difference in
2017 [38]	US, China.	RateMDs,	from RateMDs	156,558	identify the major	health care systems & cultures.
		HaoDF	(n=25,016) and	reviews.	topics in positive and	Chinese patients focused on
		(Chinese).	HaoDF (n=8,167).	HaoDF:	negative reviews of	medical treatment. American
				57,342	those two countries.	patients focused on
				reviews.		recommendation for other
						patients.
Tran et al.,	2016, the	1 site: Yelp.	Health care	2,685,066	Inferential statistics for	Lower ratings were associated
2017 [50]	US.		service providers	reviews	the association	with longer hours during normal
			identified by Yelp	submitted for	between PORs and	working hours on Monday,
			(n=2,085).	85,901	temporal accessibility	Saturday, and Sunday, and
				businesses.	of health care services	outside normal working hours on
						Friday. Higher ratings were

					measured by opening	associated with longer normal
					hours.	working hours on Sunday.
Murphy et	1989-	3 sites: Vitals,	Physicians who	NA	Inferential statistics	POR ratings were lower for
al., 2017	2015, the	HealthGrades,	were placed on		compared POR ratings	doctors on probation. Lower
[86]	US	RateMDs.	probations		by whether a doctor	PORs were associated with
	(California		(n=410) vs.		was on probation.	probation related to infractions
).		controls (n=818).			for medical documentation,
						incompetence, prescription
						negligence, and fraud.
Emmert et	2015, the	1 site:	Hospitals (n=623)	A stratified	Correlations between	Some PORs were associated with
al., 2018	US.	RateMDs.		random	PORs and hospital-level	CMS quality measures, but
[45]				sample of	quality measures	overall associations were weak.
				PORs	published by the CMS;	
				(n=1,000)	content analysis.	
Zhang W. et	2016,	1 site: HaoDF	Physicians from 5	3,012	Content analysis.	Ob/Gyn and Internal Medicine
al., 2018	China	(Chinese).	top ranked	negative		received the most negative
[37]	(Beijing).		hospitals in Beijing	comments		comments. Complaints were
			(n=1,029).	only.		related to insufficient
						consultation time, physician
						impatience, and perceived poor
						therapeutic effect. Those
						accompanying older patients or
						children, traveling patients were

						less likely to have tolerance for poor medical service.
Agarwal et	2018, the	1 site: Yelp.	Emergency	Total=100,949	LDA, Topic models;	There were more 5-star UCC
al., 2018	US.		departments (ED,	reviews,	language analysis.	reviews than 5-star ED reviews.
[49]			n=1,566) and	ED=16,447		Themes of POR reviews varied
			urgent care	UC=84,502		between ED and UC, and among
			centers (UCC,			types of providers.
			n=5,601).			
Cloney et	2018, the	3 sites:	Neurosurgeons	NA	Compared PORs with	Median ratings = 4.11/5, but
al., 2018	US.	RateMDs,	(n=3,054) above		physician	varied between PRWs, regions,
[66]		HealthGrades,	25 th percentile of		characteristics and	and settings. Higher POR scores
		Vitals.	number of		across regions.	were associated with ranking of
			reviews.			medical school, recent
						graduation, and fellowship
						training completion.
Geletta,	2016, the	1 site: Yelp.	Uniquely	1,569,264	Compared PORs across	Overall rating = 3.8/5. Rating =
2018 [52]	US.		identifiable health	reviews.	different types of	3.16/5 for specialty physicians.
			service providers,		providers	Rating = 4.52/5 for physical
			including dentists,			therapists.
			general practice			
			physicians,			
			specialists,			
			physical			

			therapists, and hospitals (n=866).			
Liu et al.,	2005-	1 site:	Physicians	640,603	Descriptive and	Mean POR ratings = 3.9/5. Mean
2018 [43]	2013,	RateMDs.	identified by	ratings.	inferential statistics.	number of POR = 11.2.
	Canada.		RateMDs			Physicians of OB/GYN, family
			(n=57,412)			medicine, surgery, &
						dermatology were more
						commonly rated. Others in
						pathology, radiology, genetics,
						and anesthesia were less
						represented.
Trehan et	2010-	2 sites: Vitals,	High-volume total	NA	Inferential statistics for	PORs were not associated with
al., 2018	2012, the	HealthGrades.	knee replacement		differences in TKR	TKR outcomes.
[72]	US (New		(TKR) surgeons		outcomes (eg, infection	
	York		from the		rates, readmission	
	State).		Statewide		rates, revision surgery	
			Planning and		rate, etc) by POR	
			Research		ratings.	
			Cooperative			
			System (SPARCS)			
			database from the			
			NYS Department			
			of Health. (n=174)			

Campbell &	2015-	1 site:	Acute care	Facebook	Compared PORs with	PORs were positively associated
Li, 2018 [70]	2016, the	Facebook.	hospitals (n=136)	page	and (1) HCAHPS patient	with HCAHPS patient satisfaction
	US (New			comments.	satisfaction measures,	measures. No correlation
	York State)			Numbers N.A.	(2) the 30-day all-cause	between POR rating and (1) 30-
					readmission rate, and	day readmission rate; (2)
					(3) the Medicare	Medicare spending per
					spending per	beneficiary ratio.
					beneficiary (MSPB)	
					ratio.	
Chen et al.,	2015, the	2 sites: Vitals,	Physicians at a	NA	Correlation between	PORs were correlated with the
2018 [71]	US.	HealthGrades.	university hospital		POR rating and patient	Press Ganey Medical Practice
			(n=200)		satisfaction survey	Survey (PGMPS).
Daskivich et	2018, the	5 sites:	Specialists (n=78)	30 reviews.	Multivariable linear	No significant association
al., 2018a	US.	HealthGrades,			regression for the	between PORs and all quality
[73]		Vitals, Yelp,			relationship between	measures: Choosing Wisely
		RateMDs,			PORs & specialty-	measures, 30-day readmissions,
		UCompareHea			specific quality of care	length of stay, adjusted cost of
		lth Care.			performance scores	care, physician peer-review
						scores, administrator peer-
						review scores
Dorfman et	2011-	3 sites:	Top-rated plastic	1,077 PORs on	Descriptive statistics;	PORs on breast augmentation
al., 2018	2016, the	Google, Yelp,	surgeons (n=30).	breast	content analysis.	grew by 42.6% annually on
[76]	US (6 large	RealSelf.				average 2011-2016. Ratings

	metropolit			augmentation		were distributed bimodally, with
	an areas).			surgeries		peaks at 5 stars and 1 star. 87.5%
						PORs were positive. 70% PORs
						were about aesthetic outcomes
						compared with 8% about cost.
Johari et al.,	2016, the	2 sites:	Nursing homes	NA	Compared PORs with	POR rating was significantly
2018 [51]	US	Nursing Home	(n=675).		nursing home NHC	different from NHC rating.
	(California	Compare			quality measures	
).	(NHC) on CMS				
		website, Yelp.				
Donnally et	2017-	3 sites:	Registered North	229 PORs;	Compared PORs with	(1) Social media presence
al., 2018a	2018, the	HealthGrades,	American Spine	4,701 patient	(1) physicians' social	correlated with number of
[87];	US	Vitals, Google.	Society (NASS)	comments;	presence (websites or	ratings and comments but did
Donnally et	(Florida,		physicians (n ₁	215 PORs,	social media accounts);	not impact overall scores. PORs
al., 2018b	Texas).		=299; n ₂ =210; n ₃	respectively.	(2) Physician	across 3 PRW were highly
[88];			=215)		characteristics:	correlated. (2) PORs were
Donnally et					competence, character,	negatively associated with older
al., 2018c					likeability, personality	age, longer wait time, and
[89]					vs medial staff, billing,	absence of websites. PORs
					scheduling, wait time,	reflected physician likability,
					office environment).	staff interactions, billing, and
						clinic environment.

Randhawa	2016, the	1 site: Vitals.	Radiation	NA	Associations of POR	Mean rating = 4.34/5. Positive
et al., 2018	US and		oncologists		overall rating with	PORs were correlated with
[90]	Puerto		accepting		specific ratings	accuracy of diagnosis, bedside
	Rico.		Medicare		including accurate	manner, less wait time, and time
			(n=4,443).		diagnosis, bedside	spent with patients.
					manner, appropriate	
					time spent with	
					patients, etc.	
Haglin et	2016-	3 sites:	Registered North	NA	Associations of overall	Trustworthiness was the
al., 2018	2017, the	HealthGrades,	American Spine		POR rating with coded	strongest predictor of POR
[67];	US.	Vitals,	Society (NASS)		themes of patient	overall rating. Academic
Kalagara et		RateMDs.	orthopedic spine		comments including	proclivity, region of practice, and
al., 2018			surgeons (n=282;		trustworthiness,	physician sex has no relationship
[91]			250) selected		experience match,	with trustworthiness.
			from a total of		professional	
			2,817 surgeons.		competence, etc.	
Zhang J. et	2016, the	5 sites:	Spine surgeons	615 ratings.	Compared PORs with	Mean rating = 80/100. Average
al., 2018	US.	HealthGrades,	(n=209).		physician	number of POR per surgeon =
[92]		Vitals,			characteristics	2.96.99.5% of spine surgeon had
		RateMDs,				≥ 1 rating. Surgeons in academic
		WebMD, Yelp.				practice had higher ratings.
						Surgeons with ≥21 years of
						practice were rated lower.

Prabhu et	2016, the	1 site:	Radiation	NA	Descriptive statistics	Mean Likely To Recommend
al., 2018	US.	HealthGrades.	oncologists		compared PORs with	(LTR) score rating = 4.51/5. LTR
[93]			participating		physician	was associated with time spent
			Medicare		characteristics.	with patient and level of trust.
			(n=2,679).			
Jack et al.,	2017, the	4 sites:	Orthopedic	NA	Descriptive analyses for	Mean number of PORs = 9/10.
2018 [94]	US (9	HealthGrades,	surgeons selected		the number of PORs.	The number of PORs did not
	cities)	Vitals,	from American		Inferential statistics	differ by age. Surgeons with less
		RateMDs,	Board of		compared the number	than 10 years of acquiring board
		Yelp.	Orthopedic		of PORs with years of	certification received more
			Surgery (ABOS)		practice and regions of	PORs.
			database (n=351)		practice	
Skrzypecki	2016, the	2 sites:	Ophthalmologists	NA	Inferential statistics	Mean POR rating = 4.2/5. The
et al., 2018	US.	HealthGrades,	(n=105).		compared PORs with	POR rating did not correlate with
[69]		ZocDoc.			doctors' academic	the number of citations or Hirsh
					performance measured	index.
					by number of	
					publications and	
					citations or Hirsh index.	
Daskivich et	2017, the	1 site:	Health care	212,933	Descriptive and	POR ratings were highly left
al., 2018b	US.	HealthGrades.	providers	ratings.	inferential statistics to	skewed, fell within narrow
[95]			(n=212,933)		examine whether	ranges, and differed by
			identified by		distributions of POR	specialties.

			HealthGrades,		ratings differed across	
			representing 29		specialties.	
			medical			
			specialties, 15			
			surgical			
			specialties, and 6			
			allied health			
			professions.			
McGrath et	2018, the	3 sites:	Physicians with	223,715	Descriptive statistics	POR ratings of four specialties
al., 2018	US	HealthGrades,	more than 2	ratings.		(family medicine, allergists,
[96]	(Atlanta,	RateMDs,	reviews, including			internal medicine, and
	Boston,	Vitals.	some from the			pediatrics) were higher among
	Chicago,		"America's Top			the physicians listed as a peer-
	Dallas,		Doctors" list			reviewed "Top Doctor"
	Washingto		(n=24,579)			
	n DC, Los					
	Angeles,					
	Miami,					
	New York,					
	Philadelph					
	ia, and San					
	Francisco).					

Hendrikx et	2008-	1 site:	Health care	70,889	Inferential statistics	PORs varied slightly by regions
al., 2018	2017, the	Zorgkaart	providers	ratings.	compared POR ratings	PORs can be used to identify
[40]	Netherlan	(Dutch).	(n=4,100).		and providers'	under-performing providers
	ds (9				characteristics	within their regions but not
	regions).				including regions.	sufficient for policy
						recommendations.
Goshtasbi	2018, the	5 sites:	American	NA	Content analysis.	POR ratings and comments were
et al., 2019	US.	HealthGrades,	Neurotology			highly dependent on patient
[64]		Vitals,	Society members			perceptions of physician
		RateMDs,	(n=560).			competence, caring bedside
		Yelp, Google.				manner, and office
						management.